

GENETICS DEPARTMENT PROGRAMS

The Genetics Department will share responsibility with the departments of Pediatrics and Ob/Gyn for the implementation of the Lt. Joseph P. Kennedy, Jr. Laboratories for Molecular Medicine, which are dedicated to the problem of mental retardation. The Laboratories will provide for a wide range of research, including clinical and laboratory studies on prematurity, immunological factors in reproduction, the biochemistry of the central nervous system and its development, and basic studies in molecular biology and the genetics of microorganisms. A Bio-Medical Instrumentation Laboratory, supported by the National Aeronautics and Space Administration, is also associated with the Genetics Department.

Major activities and principal investigators:

GENETIC CHEMISTRY Professor J. Lederberg (Department Executive)

The genetic functions of DNA in bacteria. (DNA transformation in *B. subtilis*.)

CELL GENETICS AND IMMUNOGENETICS Asst. Professor L. A. Herzenberg

Genetics of tissue cells in culture; genetics and chemistry of cell antigens (mice); transplantation immunity.

PHYSIOLOGICAL GENETICS; BIOMETRICAL GENETICS Asst. Professor Walter Bodmer

Pending completion of new laboratories (Winter 1964-65) Dr. Bodmer is working directly with Dr. Lederberg in genetic chemistry. His previous background has been in population genetics, and he is also continuing studies along these lines, e.g., evolution of dominance, and control of recombination.

MOLECULAR NEUROBIOLOGY Assoc. Professor Eric Shooter (effective 1963-64)

Proteins of the central nervous system: chemical structure; cellular distribution; developmental and genetic control; role in information storage.

COMPARATIVE BIOCHEMISTRY; EXOBIOLOGY

Molecular Biology in relation to biochemical evolution. (Aspects of DNA and protein synthesis.) Responsibility for biochemical concepts to guide the exobiology-instrumentation development.

BIO-MEDICAL INSTRUMENTATION Research Physicist Elliott Levinthal
(NASA support)

Engineering development of electronic and mechanical instrumentation for the sensitive detection of basic attributes of life in planetary landing missions. The program stresses the validation of basic concepts but includes selected hardware developments. NASA has specifically charged this laboratory with the extension of technologically related ideas to basic problems in biology and medicine, e.g., instrumentation for ultra-sensitive assay in genetic chemistry, enzymology or neurobiology, as well as problems in other areas of medicine.